SAFE HARBOR AGREEMENT

AND

CANDIDATE CONSERVATION AGREEMENT WITH ASSURANCES

FOR THE COLORADO PIKEMINNOW, RAZORBACK SUCKER, ROUNDTAIL CHUB, FLANNELMOUTH SUCKER, AND BLUEHEAD SUCKER

IN THE MIDDLE DUCHESNE RIVER WATERSHED, UTAH

CONTENTS

INTRODUCTION

This Agreement is part of an application for an Enhancement of Survival Permit (Permit), pursuant to section 10(a)(1)(A) of the Endangered Species Act (ESA), for incidental take of the endangered Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) and the unlisted bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*Catostomus latipinnis*), and roundtail chub (*Gila robusta*). The Permit would immediately authorize incidental take of listed species and would authorize incidental take of non-listed species if they become federally listed during the life of the permit. Specifically, the Permit would permit the take associated with construction of a fish passage structure at the Myton Diversion (Diversion) on the Duchesne River in Duchesne County, Utah, and for continued bypass of flow regimes to support habitat in the lower Duchesne River. Such take is expected to be only from entrainment in irrigation canals.

The Permit would be issued to the Associated Water Users of the Duchesne and Strawberry Rivers (DSWUA), which would then convey take authorization and regulatory assurances to water users who volunteer to enroll in the Agreement through Certificates of Inclusion (CIs).

The Safe Harbor Agreement (SHA) portion of this Agreement is in support of the Permit application for the listed species. The Candidate Conservation Agreement with Assurances (CCAA) portion is in support for Permit coverage of the unlisted species, which would become effective for each species if and when they become listed.

This Agreement addresses the regulatory requirements of both the Safe Harbor and the Candidate Conservation Agreement with Assurances programs available under the ESA. This Agreement, effective and binding on the date of the last signature below, is between the State of Utah, Utah Department of Natural Resources, Division of Wildlife Resources (UDWR), Associated Water Users of the Duchesne and Strawberry Rivers (DSWUA), and the U.S. Fish and Wildlife Service (Service), herein collectively called the "Parties."

This Agreement incorporates conservation actions that are designed to benefit all of the covered species. However, because of the differences in the implementing regulations and the permit issuance criteria governing SHAs and CCAAs, the Agreement consists of two distinct program components, a SHA and a CCAA. The administration of each of the components is governed by this Agreement.

Administrators of this Agreement are:

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PURPOSE

The purpose of this Agreement is to conserve the covered species by implementing conservation measures in the covered area and to provide regulatory certainty to the Parties for contributing to the conservation of the species. The conservation measures will be implemented by the Parties and other cooperators and will consist of constructing a fish passage structure at the Myton Diversion and allowing flows to reach the lower Duchesne River. Regulatory certainty will be provided by the issuance of the Permit to the DSWUA and subsequent Certificates of Inclusion that convey incidental take coverage to enrolled water users for their agricultural water diversions. The CI process is described in the Enrollment Eligibility and Certificate of Inclusions section, below.

AGREEMENT DURATION

The duration of this agreement is 25 years from date of the Service's signature. The duration of the Permit issued in conjunction with approval of the Agreement will be 25 years.

COVERED AREA

This Agreement covers the wetted areas of: the Duchesne River between Myton and Knight Diversions; the Strawberry River between the confluence with the Duchesne River and Starvation Dam; all wetted tributaries to these two rivers with confluences above Myton Diversion and below Starvation Dam or Knight Diversion; and the entirety of the canal systems which have intake facilities between the Myton diversion, Starvation Dam, and the Knight Diversion. Herein after, this area will be considered the "covered area." The covered area is described in more detail in the attached document 'Supporting Information for the Myton Diversion CCAA/SHA' (Supporting Information). The riverine habitats in the covered area are shown in Supporting Information, Figure 1. The covered area is located in Duchesne County, Utah.

Within the covered area, it is expected that only irrigation intakes will need to be provided incidental take coverage and enrolled in Certificates of Inclusion because entrainment is the only source of incidental take that currently exists in the covered area (see Regulatory Certainty for Local Water Users & Incidental Take Coverage below). Once enrolled under the procedures outlined herein, these affected structures will be considered "enrolled property" as defined in the Service's Safe Harbor Agreement Final Policy (64 FR 32717) and/or as defined in the Service's Candidate Conservation Agreement with Assurances Final Policy (64 FR 32717).

ESTABLISHMENT OF BASELINE CONDITIONS FOR THE LISTED SPECIES UNDER THE SAFE HARBOR AGREEMENT

Prior to entering into a Safe Harbor Agreement, the Service and the enrolled entities must determine the baseline conditions of listed species in the covered area. This baseline condition is the condition of the listed species before the Safe Harbor Agreement and its actions are put into

place. If the Safe Harbor Agreement is ever canceled, the Service allows the enrolled entities to return the covered area to this condition, but holds the enrolled entities responsible for not returning the listed species to a worse condition. The purpose of this baseline is two-fold – 1) it ensures to the Service that the protection provided to covered listed species is not eroded below current conditions; and 2) it provides participating landowners with a clear understanding of their assured rights to return enrolled lands to conditions existing prior to the Agreement (baseline conditions) levels (64 FR 32717).

Because of a number of factors, including fish passage barriers and reduced water supply, the Colorado pikeminnow and razorback sucker are considered extirpated from the covered area. Simply stated, both species no longer occur in the covered area, but it was historical habitat in the past. As a result, the SHA baseline for both Colorado pikeminnow and razorback sucker is zero fish because the covered area is unoccupied, but historic habitat.

The baseline condition does not apply to CCAAs because the baseline provisions only apply to federally listed species. As a result, baseline conditions are not established for flannelmouth sucker, roundtail chub, or bluehead sucker because they are not currently listed.

COVERED SPECIES

The SHA portion of this agreement covers the federally endangered Colorado pikeminnow and razorback sucker. The CCAA portion of this agreement covers the bluehead sucker, flannelmouth sucker, and roundtail chub – hereafter called the "three species." All five species are native to both the covered area and the larger Upper Colorado River Basin. Collectively, these five species are known as the "covered species" as defined in Service's Safe Harbor Agreement Final Policy (64 FR 32717) and/or defined in the Service's Candidate Conservation Agreement with Assurances Final Policy (64 FR 32717). Current threats to the five species include reduced water availability, impediments to migration, non-native species, and water pollution. More information on the covered species status, ecology, and populations can be found in the Supporting Information.

CONSERVATION GOALS AND OBJECTIVES

The goals of the conservation agreement described in this document are to improve native fish habitat quality and quantity in the Duchesne River basin through multiple objectives of augmenting flows and facilitating natural movement of native fish species. Conservation objectives will result from two actions in the Duchesne River Basin:

1. Water will be released from various locations (for example Starvation Reservoir and Big Sand Wash Reservoir) to assist in meeting flow recommendations in the lower Duchesne River as directed in the Service's 2005 Biological Opinion amendment[1] (see Goal 1, below). These water releases will bypass canal company diversions, but not interfere with any existing water rights; and
2. Local agencies, including the Ute Tribe, the Service, the Bureau of Indian Affairs, and the UDWR, will oversee construction of a passage structure for native fish at the Myton Diversion, while also excluding the movement of non-native fish above the Diversion (see Goal 2, below).

[1] U.S. Fish and Wildlife Service. May 4, 2005. Update of the Reasonable and Prudent Alternative in the July 1998 Biological Opinion for the Duchesne River Basin. Provided to Bureau of Reclamation, Central Utah Project, and Bureau of Indian Affairs.

GOAL 1: PROVIDE CONSERVATION FLOWS IN THE LOWER DUCHESNE RIVER

A series of scientific investigations in the late 1990s and early 2000s determined flow levels that are needed to support recovery of endangered fishes in the lower Duchesne River (for example: Gaeuman *et al.* 2003; Modde and Keleher 2003). These studies established flow recommendations for the lower Duchesne River that were adopted in Appendix A of the 2005 amendment to the 1998 Biological Opinion for the Duchesne River basin (2005 amendment). To summarize,[2] a recommended target of 50 cubic feet per second (cfs) should be provided year round to prevent a short-term catastrophic loss of aquatic habitat and ensure adequate prey base for Colorado pikeminnow. Secondly, target passage flows of at least 115 cfs are recommended, if available, for March 1 to June 30 (covering the high flow, pre- and post-runoff period) to allow sufficient riffle depth for Colorado pikeminnow access. Lastly, spring peak flows in excess of 4,000 cfs are needed to entrain gravel, flush fine sediment, and form complex channel features.

To meet these goals, the DOI acquires[3] blocks of water to augment flows in the lower Duchesne River. The Service, DOI, UDWR, Utah Division of Water Rights (UDWRt), the Bureau of Indian Affairs (BIA), the Central Utah Water Conservancy District (CUWCD), the Ute Tribe, and certain local irrigation companies enacted a cooperative effort called the Duchesne River Workgroup (DRWG) to manage this water. Initially it was proposed to shepherd released water past the irrigation diversions, but there were many legal and logistical factors that made this impractical. Instead, the DRWG members decided to experiment by releasing water during periods of low flow. In practice, this meant that when low flows occurred in the lower Duchesne River, the irrigators would divert their allowable maximum and that any excess flows in the river would bypass each diversion. However, one problem with this approach was documentation of ownership of the released water. Without documented ownership, the water cannot be legally protected or shepherded down river.

Before the first year of the experiment, the DRWG members approached the Uintah Basin Irrigation Company (UBIC) and requested that the UBIC not claim the released water as their own, allowing it to bypass structures. The UBIC agreed to participate, and in subsequent years the same experiment was conducted with the assumption that the irrigation company was still agreeable to the process (though no further official request to continue the experiment was made until the spring of 2011). Overall, the results of this experimental water management approach show that the concept works. However, the process does have its difficulties. For example, the process requires predicting the losses on the reach of the river (impacted by the weather) and requires close coordination between CUWCD and the river commissioner.

This Agreement formalizes this process, using the past success of the DRWG as a foundation for future actions. As part of the Agreement, the DSWUA member irrigation companies agree to continue to follow this process and allow fish conservation water to bypass their canal intakes, thus providing higher flows for fish species. Similarly, the Service agrees to manage in stream flows for fish species without affecting local water users. The flows provided under this Agreement will assist in meeting the flow recommendations found in the 2005 Biological Opinion amendment. Overall, these flows offer higher quality and more varied habitat conditions for aquatic life downstream of Starvation Reservoir with the primary purpose of maintaining biological productivity. Because Colorado pikeminnow are an apex predator in this system, maintaining biological productivity is important for recovery (biological productivity provides a robust prey

[2] A more complete description of the flow recommendations can be found in the Supporting Information.
[3] DOI has current blocks of water in Starvation Reservoir and Big Sand Wash, but will pursue additional blocks if they become available.

base). The three non-listed CCAA species covered by this document (bluehead and flannelmouth sucker, and roundtail chub) are important prey items for Colorado pikeminnow, indicating that flows supporting biological productivity should support the three species directly. Therefore, these flow recommendations have the desired intent to support populations of all the covered species.

GOAL 2: CONSTRUCT A FISH PASSAGE STRUCTURE AT THE MYTON DIVERSION

A fish passage structure at the Myton Diversion will allow native fish downstream of the Diversion (both listed and non-listed) to access a higher proportion of their native habitat for breeding, feeding, and sheltering. Specifically, it will allow native fish outside of the covered area to enter into the covered area and reproduce with individuals found upstream (facilitating genetic mixing), forage in habitats that are currently unavailable to them, and extend their home range to a larger area (providing additional habitat in times of stress, satisfying migratory needs, and offering rearing and refuge habitat that is largely unaffected by certain problematic non-native species).

The natural flow of the river, irrigation demands, releases of water acquired by DOI, and biological information will dictate when the fish passage structure can be operational. For example, although water may be available to operate the structure, there may be no valid biological reason for operating the fish passage at certain times of the year (such as no migrating individuals, no spawning activity, etc.). Rather than operate the structure and use critical manpower when conservation returns are low, the fish passage structure would simply be closed by placing wooden flash boards across the passage.

However, when biological reasoning dictates and flows are available,[4] UDWR and the Ute Tribe would operate the fish passage structure as often as possible. Because the fish passage structure must operate in a way that does not infringe on existing water rights, it is important to clearly understand when flows would be available to operate the structure. Based on a water management decision hierarchy, the signatories of the Agreement developed a decision tree to describe operation of the structure (Figure 1). In summary, the fish passage structure may operate as follows:

1. Outside of the irrigation season,[5] the structure will be able to operate using natural flows from the Duchesne River;
2. When all irrigation demands are being met, excess flow at the Myton Diversion will also allow for the operation of the structure;
3. When water provided by DOI is being released, the structure may be able to operate with the provided water. The ability to operate the structure using water provided by DOI is based on:
    a. The amount of DOI water actually reaching the structure once losses (seepage, evaporation, etc.) are accounted for; and
    b. Whether this amount provides adequate water volume to operate the structure.

    It is understood that all losses of DOI acquired water must be held by the user – in this case fish conservation flows.
4. The structure will not operate during the irrigation season if water provided by DOI is not being released and excess flows are not available.

[4] This will occur mainly during spring peak flows and associated native fish spawning migrations.
[5] The irrigation season is April 1 to October 31.

Based on these criteria, the fish passage structure could operate a large portion of the year. However, the Ute Tribe, the UDWR, and the Service plan to initially operate the fish passage structure under an experimental process. That is, during the first few years of operations, the fish passage structure will only operate during spawning periods, when fish are known to migrate. During other times of the year, the agencies will experiment using the fish passage structure to determine if individual fish are trying to migrate. As more information is collected, the agencies may decide to operate the fish passage during a different portion of its operational window.

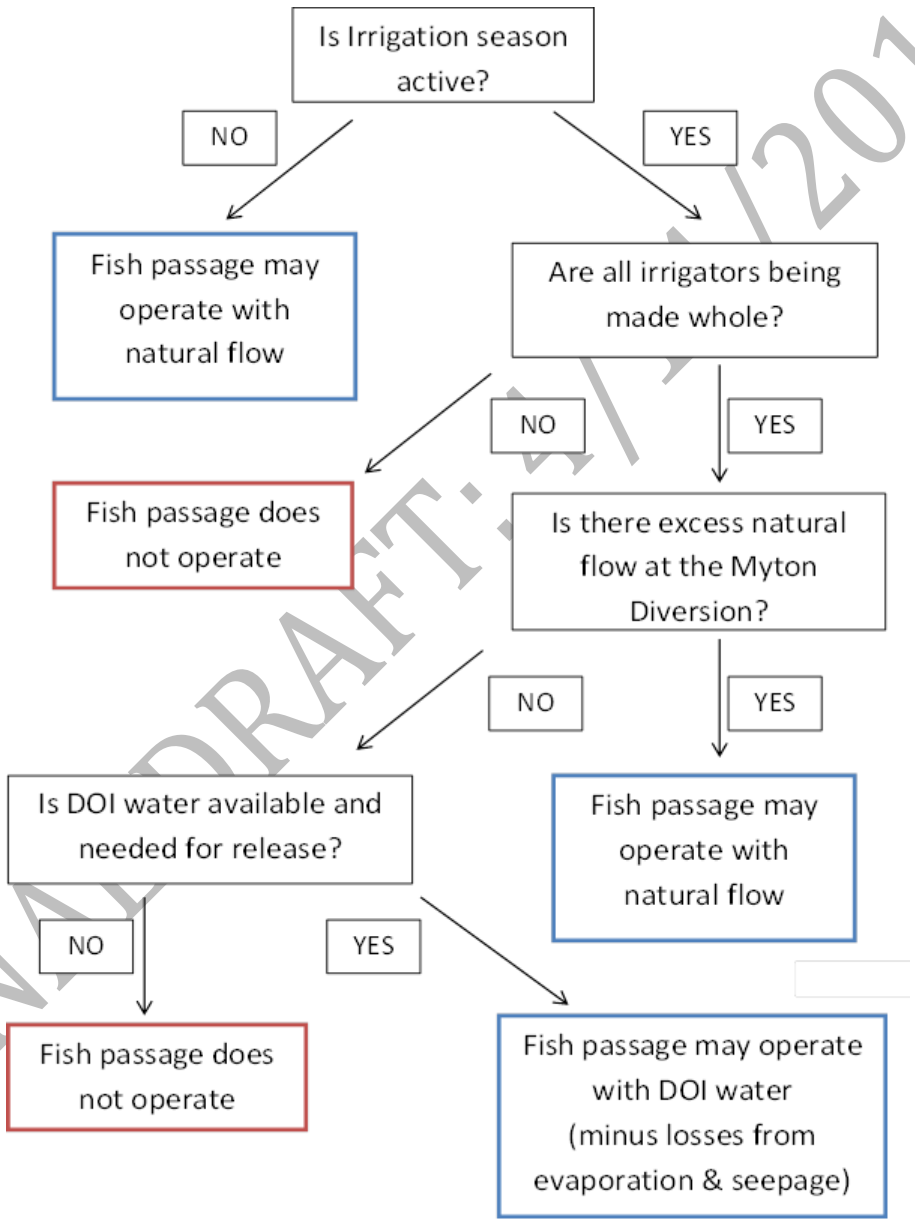

Figure 1. Decision diagram demonstrating constraints for operation of the fish passage structure

IMPACTS TO COVERED SPECIES

Implementing this Agreement will provide passage and allow individuals of the covered species to inhabit the covered area. Once individuals enter the covered area, they may encounter actions that are considered forms of 'take' as defined by the Endangered Species Act.[6] If this take results from, but is not the purpose of, carrying out an otherwise lawful activity, it is considered 'incidental take' and can be permitted by the Service. Considering the amount of take that a species may encounter, and then weighing those impacts against the positive benefits of the conservation goals is an important step in both the SHA and CCAA processes.

Under this Agreement, the covered area is primarily bordered by rural agricultural lands engaged in grazing and hayfield operations. As such, impacts to fish are those resulting from agricultural operations - irrigation diversions, grazing, and crop production. However, the Service does not anticipate any incidental take from routine agricultural operations such as grazing and crop production. During routine operations, these actions do not cause impacts that rise to the level of take. Contrastingly, non-routine agricultural actions may impact stream habitat and fish, such as stream alterations or chemical treatments. However, these actions have existing regulatory mechanisms that can consider the impacts to the stream and fish when the action is permitted. Therefore, any take that might arise from a non-routine action can be considered under the appropriate permitting process, and are not part of the covered activities under this Agreement.

Consequently, the Service believes that the sole source of incidental take from routine agricultural operations that will impact the covered species in the covered area is entrainment into irrigation canals. Operation of irrigation canals is a lawful activity that can cause take of individual fish through entrainment – the process by which aquatic organisms are diverted into irrigation structures. Entrainment into irrigation canals is considered a major source of mortality for fish populations in the western United States because individual fish that enter canal systems typically cannot escape back into stream habitat (Carlson and Rahel 2007; Roberts and Rahel 2008). Near 100 percent mortality is expected of all individuals entering an irrigation canal structure because of the numerous unnatural conditions in the canals. Individuals entrained into canals are exposed to higher water temperatures and non-natural substrate (often concrete), while also becoming easier prey for predatory birds and mammals. Those fish that survive for long periods ultimately encounter the end of the irrigation season, when water is often shut off from the canals (Roberts and Rahel 2008), trapping individual fish in dewatered, lethal conditions.

Despite this threat of impact, the Service believes that many characteristics of the covered area and covered species reduce the overall threat of entrainment to individuals and populations of the covered species. In order to attempt to quantify the risk of entrainment, the Service looks at the biology of the species and the operation of the intake structures. Entrainment affects young small fish with reduced swimming speeds, particularly fry, at a greater rate than adult fish. Therefore, it is logical to analyze entrainment risk in two categories – younger fish and adult fish.

Varying levels of reproductive success make it difficult to quantify the number of young fish expected to be entrained each year. However, we can assume that the larval fish are equally distributed throughout the water column during their initial drift after emerging from eggs. As a

[6] Section 3(18) of the Endangered Species Act defines 'take' as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Further rulemaking defined 'harm' to include any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife (50 CFR Part 402).

result, we can assume that the proportion of water taken in by the structure is equivalent to the proportion of individuals entrained.

The Service does not expect young life stages of Colorado pikeminnow and razorback sucker to be impacted, as neither of these species is expected to reproduce in the covered area. Both of these species reproduce at established spawning areas that are not found in the covered area. In contrast, roundtail chub, flannelmouth sucker, and bluehead sucker could reproduce in the covered area, as is evident by the currently reproducing population of flannelmouth sucker. Each of these species use water temperature as primary queues to spawn, with flannelmouth sucker, bluehead sucker, and roundtail chub spawning at water temperatures of approximately 10° C, 16° C, and 18° C, respectively (Utah Division of Wildlife Resources 2006). Using the temperature gauge at the Duchesne River near Randlett, these temperatures correspond to early April (10° C), mid-May (16° C), and early June (18° C) in the covered area. Factoring in timing of egg incubation and hatch, larval fish emergence ('swim-up'), and development of swimming capabilities ('swim-down'), these species are most vulnerable to entrainment from early May to late June.

Based on average daily flows from USGS stream gauges and canal monitoring gauges we can estimate the entrainment rate of flow during this critical time when young fish may be present in the covered area. Between early April and late June, we estimate that no single irrigation diversion should entrain more than 20% of the young fish in the area. Because all three of these species have high reproductive capability (single individuals can produce 10,000 to 20,000 eggs) and are typically recruitment limited, the loss of 20% of newly hatched larval fish is unlikely to have a significant impact to the population.

In contrast to newly hatched fish, juvenile and adult fish, such as the ones that would use the fish passage structure, have swimming abilities that should allow them to escape entrainment threats by swimming away from the irrigation intakes before being pulled in. Providing flows as part of this Agreement should provide individual fish adequate habitat to avoid the canal intakes. In other words, individuals of the covered species will not seek out the canals simply because they provide wetted habitat.

Under this Agreement, the Associated Water Users of the Duchesne and Strawberry Rivers is applying for an enhancement of survival permit from the Service that would authorize take of listed fish that are entrained into canals. This holds participating water users harmless for any listed fish that become entrained into their canals as part of their otherwise legal action. Entrainment impacts are quantified in the 'Quantification of Take' section below and will be quantified in the corresponding Biological Opinion.

Because entrainment is the only source of incidental take to occur as part of this Agreement, the only entities that need incidental take coverage are the owners of the irrigation intakes. As described above, local landowners are not expected undertake activities that rise to the level of take. Therefore, landowners do not need incidental take coverage. This includes those with riverfront property, those with canal right-of-ways, or those owners of the canals themselves. If fish are found on any of these locations it will either be the result of the fish passage structure moving fish upstream or the result of entrainment into an irrigation canal – not the result of any landowner action.

EXPECTED BENEFITS

This Agreement, and the conservation goals within, will provide multiple benefits to the covered species. First, the fish passage will provide access to a larger quantity of habitat, greater genetic mixing, and barriers to nonnative species movement. Second, conservation flows will improve habitat quality by improving water quality, increasing biological productivity, and maintaining channel characteristics.

Benefits of providing passage at the Myton Diversion

As mentioned previously, at first the fish passage will be used predominantly during the spring runoff, which coincides with the spawning periods of each of the covered species. However, in the future the fish passage structure may operate during more times of the year if scientific information demonstrates a need and adequate flows provide the capability. We conclude that providing passage at this current barrier will benefit each of the covered species.

First, providing passage at the Myton Diversion will allow individual fish with large home ranges to fulfill their life history more effectively. The long distance movements of flannelmouth sucker, bluehead sucker, and Colorado pikeminnow are well documented and well known. Long distance movements are often associated with spawning activities, where individuals leave their resident home area, travel to a spawning area, and then return to their home area. Currently, flannelmouth sucker that leave the covered area to spawn are not able to return to their home area because they cannot pass back over the Myton Diversion.

Secondly, the fish passage structure will provide a biological connection that supports the continued existence of a relic population of flannelmouth sucker above the Myton Diversion. The fish passage structure will allow individuals outside of this relic population to emigrate into the existing population, allowing genetic mixing. Populations that cannot receive new immigrants are at risk for extirpation from stochastic events and at risk for genetic bottlenecking. The addition of new immigrants from outside the population, and the restoration of a genetic connection to the Green River population, will help rejuvenate the population that still exists near the Rocky Point Diversion.

Finally, the fish passage structure may allow native, extirpated species to recolonize the area and expand their ranges. Bluehead sucker, Colorado pikeminnow, and roundtail chub have been historically documented above the Myton Diversion, but have not been observed recently in the covered area. With adequate habitat, there is no reason to believe that these species cannot inhabit this area if allowed to immigrate into the area. While roundtail chub may not make the same long distance migrations of other species, individuals will expand their range to find adequate habitat. Razorback sucker have no documented occurrences in the covered area, but may still find it to be suitable habitat. Recently, the Green River razorback sucker population has expanded and reproduced in the White River, demonstrating that when adequate habitat exists, the species will colonize new areas.

By allowing individuals to move in and out of the area at will, and allowing species to extend their range into newly accessible habitat, the Parties agree that the fish passage structure will provide conservation benefits to all of the covered species. Furthermore, the Parties agree that these conservation measures will offer net conservation benefits to the Colorado pikeminnow and razorback sucker. The Parties also agree that if these conservation measures were applied across the range of the bluehead sucker, flannelmouth sucker, and roundtail chub, they would preclude the

need to list those species. As such the Parties agree that the Agreement meets both the SHA and CCAA standards.

Benefits of providing conservation flows

Over the years, water projects have decreased the quality of habitat in the Duchesne River by reducing the amount of available habitat in this system (USFWS 2000). Enhancing flows in the Duchesne River through this Agreement will therefore supply habitat of greater quantity and quality to native fish in the area. More habitat of greater quality benefits the covered species in a myriad of ways.

First, by working to meet the flow recommendations found in the 2005 amendment, the Agreement is preventing short term catastrophic loss of habitat and ensuring biological productivity. Primary and secondary production that forms the energetic base of the aquatic ecosystem are found in riffle habitats (shallow water habitats) (Modde and Keleher 2003). Flows below 50 cfs result in large reductions in habitat and greatest rates of invertebrate loss (Modde and Keleher 2003). By providing flows greater than or equal to 50 cfs, the Agreement is expected to provide a consistent prey base for the ecosystem supporting the covered species. Supporting an adequate prey base will deliver benefits for the entire aquatic food web, including the covered species.

Secondly, providing flows to support the flow recommendations will enhance the water quality of the covered area. Increased flow will reduce concentrations of heavy metals, selenium, salts, pesticides, or other contaminants found in the river by increasing the assimilative capacity and dilution potential for any contaminants that enter the river. Decreased concentrations of pollutants will likely have a corresponding decrease in bioaccumulation of these contaminants in the food chain, which is especially important for the predatory Colorado pikeminnow. In addition, increased flows will improve physical conditions of the river including temperature and dissolved oxygen.

Finally, enhanced flows will allow the covered species to more successfully fulfill their life history requirements. Preventing low flow conditions will improve survival of eggs and newly-hatched larval fish by reducing desiccation risk. As fish mature, young fish will likely have a higher survival rate in the first year of life because higher flows provide more nursery habitat with less predation risk. Furthermore, enhanced flows provide water of depth and velocity to allow adult fish to freely move throughout the river corridor. Low flows often create shallow portions of the river that prevent larger adult fish from swimming from one pool habitat to another.

Overall, providing flows to meet the flow recommendations of the 2005 amendment will benefit the breeding, feeding, and sheltering of the covered species. In desert rivers, such as the Duchesne River, providing a quantity of habitat of sufficient quality, at appropriate times, is critical to the survival of aquatic species. By preventing catastrophic low flows periods, the Agreement will support a healthier food web with higher ecosystem productivity. Furthermore, the Parties agree that these conservation measures will offer net conservation benefits to the Colorado pikeminnow and razorback sucker. The Parties also agree that if these conservation measures were applied across the range of the bluehead sucker, flannelmouth sucker, and roundtail chub, they would preclude the need to list those species. As such the Parties agree that the Agreement meets both the SHA and CCAA standards.

REGULATORY STANDARDS OF THE AGREEMENT

SAFE HARBOR PROGRAM GOALS AND STANDARDS

As described in the Service's Safe Harbor Agreement Final Policy (64 FR 32717), the Service must determine that the effect of the proposed voluntary conservation measure for a species covered by a SHA would produce a net conservation benefit to the species. Net conservation benefits must contribute, directly or indirectly, to the recovery of the covered species. This contribution towards recovery may vary and may not be permanent. The benefits to the species depend on the nature of the conservation measures, the activities to be undertaken, where they are undertaken, and their duration. All SHAs must meet the net conservation benefit standard ("the SHA standard").

The major threats to the federally listed species are population fragmentation, non-native fish, and habitat degradation. This project directly reduces the level of these threats in the covered area. The fish passage structure connects disjunct populations, allows for natural migration, and simultaneously prevents colonization by non-native fishes. Fish conservation flows improve habitat conditions by providing varied, biologically productive habitat with enough depth for movement of individuals.

The Parties reasonably expect this Agreement to enhance existing instream habitat through conservation flows and to increase available habitat by providing passage at an existing fish barrier. For as long as the conservation flows are maintained and properly provided downstream, and the fish passage structure remains operational, the actions will benefit Colorado pikeminnow and razorback sucker. Without this cooperative effort between private irrigation companies and tribal, federal, and state governments, it is unlikely that year-round flows in the Duchesne River would be suitable for native fish or that individual fish would be able to move above the Myton Diversion. Therefore, the implementation of this Agreement and the activities it covers, which are facilitated by the assurances of the Permit and any associated Certificate of Inclusions, is expected to provide a net conservation benefit to the Colorado pikeminnow and razorback sucker.

Given the legal mechanisms concerning water development in the State of Utah, conservation flows would not be possible in the Duchesne River basin without the cooperation of local water users. Conservation flows released from upstream reservoirs could not be properly provided downstream without the assistance of local water users and local water managers. The local water users, in order to facilitate recovery and avoid restrictions on water development, have agreed to assist in bypassing water downstream for use as fish habitat. Prior to this Agreement, this voluntary conservation action was not formalized or binding. Therefore, this Agreement provides protection for one of the key recovery criteria for Colorado pikeminnow and razorback sucker – that of adequate habitat for recovered populations, including flows for all life stages.

In addition, the current condition of the Myton Diversion prohibits upstream fish passage. Because the structure was rehabilitated in 2008 and 2009, the current condition is not likely to change for many years. That is, there is no expectation that fish passage would be possible without tribal, state, and federal governments funding a modification to the structure. While the primary purpose of the passage structure is to allow movement of the non-listed three species (based on habitat preferences), the passage of Colorado pikeminnow and razorback sucker will be possible and the modified structure will allow individuals of these species to expand their range. However, it is unknown to what extent these species would use the Duchesne River above the Myton Diversion.

As mentioned before, the primary purpose of the fish passage structure is to allow the movement of non-listed native fish (bluehead and flannelmouth suckers, and roundtail chub) because the Duchesne River supported historical populations of these species both above and below the structure. These species provide a natural forage base for Colorado pikeminnow, and therefore sustainable populations of these species are fundamental to maintaining a natural foodweb in the Upper Colorado River Basin. As a result, the conservation benefits provided to the non-listed species (improved breeding, feeding, and sheltering as described in the Conservation Goals and Objectives section) will have an indirect benefit to Colorado pikeminnow recovery.

Comparing these benefits with the level of take assumed for the project (as described in the Quantification of Take section below), the Parties reasonably expect that the Colorado pikeminnow and razorback sucker will have improved conservation status across their range. If these species expand into the covered area by using the fish passage structure, the expected level of entrainment is low. Also, if these species never expand into the covered area, existing individuals in the lower Duchesne River will have better habitat from the conservation flows portion of this agreement.

In conclusion, the Parties believe this Agreement meets the SHA standard because the conservation actions improve habitat conditions, support a larger forage base, and provide connectivity to new habitat. Specifically, the proposed SHA would contribute to the recovery of the Colorado pikeminnow and razorback sucker by contributing to the following management actions as described in the "Colorado Pikeminnow Recovery Goals" (U.S. Fish and Wildlife Service 2002a) and "Razorback Sucker Recovery Goals" (U.S. Fish and Wildlife Service 2002b):

Management Action A-1: Provide flows necessary for all life stages of [Colorado pikeminnow and razorback sucker] to support recovered populations; and

Management Action A-2: Provide passage for [Colorado pikeminnow and razorback sucker] within occupied habitat to allow adequate movement and, potentially, range expansion

CCAA PROGRAM GOALS AND STANDARDS

As identified in the Service's Candidate Conservation Agreement with Assurances Final Policy (64 FR 32717), the Service must determine that "the benefits of conservation measures to be implemented by a property owner under a CCAA, when combined with those benefits that would be achieved if the conservation measures were also to be implemented on other necessary properties, would preclude or remove any need to list the covered species" (Draft Candidate Conservation Agreement with Assurances Handbook). This is the standard that all CCAAs must meet ("the CCAA standard").

The major threats to the three species are population fragmentation, non-native fish, and habitat degradation. This project directly reduces the level of these threats in the covered area. The fish passage structure connects disjunct populations, allows for natural migration, and simultaneously prevents colonization by non-native fishes. Fish conservation flows improve habitat conditions by providing varied, biologically productive habitat with enough depth for movement of individuals.

For as long as the conservation flows are maintained and properly provided downstream and the fish passage structure remains operational, the actions will benefit the three species. Without this cooperative effort between private irrigation companies and tribal, federal, and state governments,

it is unlikely that year-round flows in the Duchesne River would be suitable for native fish or that individual fish would be able to move above the Myton Diversion.

Given the legal mechanisms concerning water development in the State of Utah, conservation flows would not be possible in the Duchesne River basin without the cooperation of local water users. Conservation flows released from upstream reservoirs could not be properly provided downstream without the assistance of local water users and local water managers. The local water users, in order to facilitate recovery and avoid restrictions on water development, have agreed to assist in bypassing water downstream for use as fish habitat. Previous to this Agreement, this voluntary conservation action was not formalized or binding. Therefore, this Agreement provides protection for one of the key conservation criteria for the three species – that of adequate habitat for populations, including flows for all life stages.

In addition, the current condition of the Myton Diversion prohibits upstream fish passage. Because the structure was rehabilitated in 2008 and 2009, the current condition is not likely to change for many years. That is, there is no expectation that fish passage would be possible without tribal, state, and federal governments funding a modification to the structure. The primary purpose of the passage structure is to allow movement of the non-listed three species and the modified structure will allow individuals of these species to expand their range accordingly.

Comparing these benefits with the level of take assumed for the project (as described in the Quantification of Take section below), the Parties reasonably expect that the flannelmouth sucker, the bluehead sucker, and the roundtail chub will have improved conservation status across their range. The Parties agree that the risk of take from entrainment is offset by the conservation goals of the Agreement. In other words, although individual fish moving upstream via the fish passage structure may become entrained into a canal in the covered area, that impact is less than the positive impacts created by allowing fish access to the upstream habitat in the covered area.

If similar conservation actions (adequate flow releases, restriction of non-natives, and providence of passage) were accomplished throughout the range of the three species, it is expected that self-sustaining populations would stabilize and threats would be minimized to the point that listing the three species would be precluded. Therefore, the implementation of this Agreement and the activities it covers, which are facilitated by the assurances of the Permit and any associated Certificate of Inclusions (CIs), meets the CCAA standard for the three species.

AGREEMENT IMPLEMENTATION

CONSERVATION MEASURES

As explained earlier in the Conservation Goals and Objectives section, the two major conservation measures being implemented under this Agreement are:

1. Release of conservation flows from Starvation Reservoir and other release points through the lower Duchesne River; and
2. Construction of a fish passage structure at the Myton Diversion for the covered species.

This section will describe the implementation of the Agreement and how these conservation measures meet both the SHA and the CCAA standard.

Conservation Flows:

Enacting an effective program for improving flows for the covered species in the lower Duchesne River involves three primary components: 1) releasing existing DOI water at appropriate times; 2) an agreement with holders of Central Utah Project (CUP) project water to not claim the released water; and 3) measuring flows in the Duchesne River at Randlett.

The foundation for successful achievement of conservation flows is the presence of DOI water in upstream reservoirs and the release of this water at appropriate times. In recent years, the DOI has acquired water sources for this purpose, working towards making a substantial block of water available for downstream flows. For example, in 2011, DOI provided 1,500 acre feet from Big Sand Wash for a period of 5 years. At the same time, a process was developed specifying the most effective release of this water. This process included establishing specific 'triggers' at which to augment flows, as measured at the USGS Streamflow gauge near Randlett, Utah. For example, in 2010, CUWCD was advised by the Service to begin releasing DOI water when flows at the Randlett gauge were at or below 45 cfs (daily mean) for 2 consecutive days. DRWG's process for releasing water is ongoing and refined each year. Both the acquisition of water and the effective release of this water are described in detail in the 2012 Water Management Report (CUWCD 2013).

However, ensuring that the release of the conservation flows does not impact existing water rights is a major concern for local water users. One of the goals of this Agreement is to protect all existing water rights from any impacts that could arise from the fish passage structure and to rely on the DOI water to meet the flow recommendations in the lower Duchesne River. This agreement shall not infringe upon any local water users' water right in order to provide conservation flows.

Because of the nature of the river, the water rights, and the distribution system (including the distribution order that is in force during periods of low flow), "shepherding" of the released water is not necessary. This is because the irrigators' diversion rates are defined and any excess flows must pass by their diversions. Coordination with the water commissioner is necessary to ensure that the diversions do not increase when the flows in the river increase because of DOI releases and conversely decrease when DOI releases are reduced. Although irrigators may be able to claim excess flows as part of their water right, the distribution order does not allow them to increase their diversions. The impact of claiming a portion of the released excess flow by an irrigation company is in regards to which block of water CUWCD charges the releases but there would be no direct impact on the flows in the lower Duchesne River. However, if irrigators claimed the increase in flow as theirs under their water rights the CUWCD would be forced to stop the release.

As described in the previous sections, the goal of this conservation measure is to effectively release DOI water from upstream sources. To do so, DOI releases (minus natural loses) will bypass downstream diversions, and will reach the lower Duchesne River to benefit the covered species, while not impacting existing water rights. For this measure to work without impacting existing water rights, CUWCD must notify the water commissioner of any change in storage releases.

Construct and operate fish passage structure:

The UDWR and Ute Tribe have signed a Memorandum of Understanding (MOU) agreeing to oversee the operation of the fish passage structure (See Appendix B). In addition, the Service and other organizations may assist in overseeing construction and operation, if needed. Construction will likely begin in Fall of 2014, with hopes of operation beginning in Spring of 2015. A description of the construction process and components can be found in the Supporting Information.

A critical aspect of successful implementation of the fish passage structure is continued maintenance of the structure. The Ute Tribe and the UDWR will cooperatively undertake this responsibility, as agreed to in their MOU. This maintenance includes, but is not limited to: cleaning the structure when debris is present; inserting and removing stop logs to alter the water intake portion; and periodically flushing accumulated sediment. Furthermore, when the passage is operational, biologists from the Ute Tribe or the UDWR must manage the selective nature of the fish passage structure. While the fish passage structure is operational, a member of either agency must visit the structure at least once a day. During the visit, the biologist will allow native fish to move above or below the structure (depending upon their intended direction), while concurrently removing all problematic nonnative fish. This process will prevent downstream non-native fish from colonizing the Duchesne River above the Myton Diversion.

To properly assess the success of the fish passage both up- and downstream of the structure, the Ute Tribe will survey tribal portions of the Duchesne River and the UDWR will survey non-tribal lands on a periodic basis. To assist in the sampling effort upstream of the structure, the UDWR will work cooperatively with water users to acquire access to the Duchesne River between Myton and Knight Diversions. In addition, the Ute Tribe and the UDWR will keep accurate records of fish encountered at the fish passage structure (see Monitoring and Reporting Section).

REGULATORY CERTAINTY FOR LOCAL WATER USERS & INCIDENTAL TAKE COVERAGE

Specific authorization of incidental take is provided as part of the Permit issued by the Service to DSWUA in conjunction with this Agreement. The Service would provide an incidental take permit under the SHA portion of this Agreement for Colorado pikeminnow and razorback sucker entrained into irrigation facilities in the covered area. In addition, should any of the three non-listed species become listed under ESA, the Service would authorize incidental take under the CCAA portion of this Agreement for entrainment into irrigation facilities operated by the participating water users. Because conservation flows will be released in the covered area and will provide adequate habitat, it is not expected that individuals of the species will seek out irrigation canals, but rather will be able to sufficiently inhabit river habitat.

Enrollment eligibility and Certificates of Inclusion

The properties eligible for enrollment in this Agreement are irrigation diversions that are located in the covered area prior to the date of last signature of this Agreement and whose owner(s) agree to the terms of this Agreement. Options for post-Agreement installations include enrolling the diversion into this Agreement, or, if there is a federal nexus, undertaking section 7 consultation with the appropriate federal agency. All such irrigation diversions that take water from the covered area could possibly entrain fish into the canal.

The DSWUA would receive the enhancement of survival permit associated with this Agreement. However, each water user that operates an irrigation diversion will need coverage for the incidental take that can occur from entrainment at their facility. Each water user that needs incidental take coverage would voluntarily sign a Certificate of Inclusion (CI) (Appendix A) describing the location of the point of diversion. Each CI will commit the participating water user to follow the conservation actions described in this Agreement. If an individual of any of the five species covered in this Agreement enter into an enrolled area, the operators are not responsible for the fate of the individual. In other words, if an individual fish were to perish in an irrigation canal, the take of that individual will be covered under the Permits and CIs associated with this Agreement.

Quantification of Take

The anticipated level of take of the covered species is difficult to quantify or measure directly, because of multiple factors. First, only one species on the covered species currently exists in the area, so colonization must be estimated or assumed. Second, the inability to observe every instance of entrainment requires us to estimate entrainment rates based on biological and habitat conditions. Lastly, entrainment rates are variable based on the size, species, and age of individual fish. In order to estimate entrainment rates for quantification of take, we made biological reasoned assumptions about each of these factors.

To account for the fact that four species currently do not inhabit that area, we must determine what levels of colonization we expect. We know levels of take for all species besides flannelmouth sucker (the only current resident species) will be zero until individuals colonize the area. Because we will be monitoring the fish passage, we will know when those species colonize the area. Once colonization occurs, estimated entrainment rates for each life stage and species will come into effect. To verify these entrainment rates, biologists will survey for evidence of reproduction. In addition, all adult fish entering the covered area will be tracked with individual PIT-tags. In cooperation with water users, antennas could be placed in irrigation works to detect adult fish that are entering canals.

To estimate entrainment rates when fish are present, we must make a number of assumptions. Because swimming capability is a key component of entrainment risk, we have broken the quantification of take into two life stages: newly hatched larval fish that drift and older fish with swimming capabilities, including age-0 fish, juveniles, and adults.

Determining the true number of larval fish entrained into irrigation facilities is very difficult, as they are very small and are continually entrained into canals. As such, we assume fish with little or no swimming ability, newly hatched larval fish, are distributed uniformly in the water column and are entrained in the same proportion as water flow. Consequently we determine that no more than 20% of newly hatched larval fish will be entrained.[7] As mentioned earlier, this should not have significant impacts to fish populations, as the species in question have high reproductive capabilities and are mostly limited by recruitment numbers, not reproductive success.

Levels of take for adult fish are expected to be very low because adults have swimming abilities that can escape canal intakes. Because we do not know what the densities of adult fish in the covered area would be in the future, it is difficult to place a number on entrainment of adults. However, based on swimming speed it is unlikely that more than 5 individuals of each species would be entrained each year.[8]

The actual level of take will be monitored indirectly through canal monitoring strategies by UDWR (periodic surveys, antenna installation, etc.) and information from local irrigators (visual surveys, reporting entrained fish). Water users will be requested to report observed mortality from incidental take to the UDWR who will report to the Service. Therefore, the Permit will authorize the take of fish entrained into canals found in water diverted into the signatories' canals under their existing water rights. If take levels are exceeded, remediation of take through possible methods (increased take allowance, preventative measures, etc.) will be the responsibility of the Service.

[7] See associated biological opinion for a detailed analysis of the take estimate.
[8] See associated biological opinion for a detailed analysis of the take estimate.

The Service recognizes that this level and type of take is consistent with the overall goal of precluding the need to list the three species, and that if conservation measures outlined in this CCAA were implemented on necessary non-federal and federal properties, there would be no need to list the species. In addition, the Service recognizes that this level and type of take will be more than offset by benefits provided to the Colorado pikeminnow and razorback sucker and will offer an overall conservation benefit to these two listed species. As such, permitting the levels of take described here meet both the CCAA and SHA standards.

MONITORING AND REPORTING

COMPLIANCE MONITORING

Each conservation goal will require separate monitoring. For Conservation Goal #1, monitoring must determine if conservation flows are bypassing canals and reaching the lower Duchesne River, and if the DRWG is meeting the flow recommendations to the best of its ability. For Conservation Goal #2, monitoring must determine if native fish are able to use the fish passage structure and if non-native fish are being successfully excluded.

Monitoring of Conservation Goal #1:

Each year Central Utah Water Conservancy District tracks the release of DOI water and the flow measurements at the Randlett Gauge. At the semi-annual DRWG meetings they present the number of days in which the flow recommendations were met and the accounting for all DOI water sources. CUWCD will continue to track these numbers and present the results to the Service and the DRWG as needed. CUWCD will also monitor any discrepancies between releases and flow measurements, any difficulties in releasing DOI water, and any possibilities for more effectively managing the water.

Monitoring of Conservation Goal #2:

The Ute Tribe and the UDWR will cooperatively operate the fish passage at the Diversion. In order to selectively move fish across the Diversion, the fish passage structure contains a 'holding area' for fish moving both up- and downstream. As fish move in both directions, they reach the holding area and cannot proceed any farther. Each day the passage is operational, a tribal or UDWR representative must visit the passage structure and sort the individuals in the holding area.

Native fish in the holding area will be passed in the direction they were attempting (i.e.: fish trying to move upstream will be placed upstream of the Diversion and vice versa for downstream movements). Contrastingly, problematic non-native fish[9] (smallmouth bass, white sucker, northern pike, walleye, etc.) will be removed and disposed of, while other non-native species attempting to use the structure (carp, shiner, etc.) will not be allowed to move upstream.

All movement by the covered species will be recorded. Species of interest, including, but not limited to the covered species, other natives of interest and problematic non-natives will be counted, surveyed for PIT-tags, measured for length, and weighed.[10]

[9] As classified by the Recovery Program.

[10] Specifics of data collection for species not covered in this Agreement will be at the discretion of the UDWR and the Ute tribe. For example, this data may or may not be collected at the species level.

The UDWR or Ute Tribe will also collect data describing the functionality of the fish passage structure. This data will include information on when the passage was operated (the number of days, dates of operation, etc.) and any maintenance required.

Each year, the UDWR will submit a report to the Service describing all of the data described above. This report should be submitted before the spring DRWG meeting, so that results may be discussed at the meeting.

BIOLOGICAL MONITORING

Monitoring Program for the Three Species

Assessment of the fish community in the middle Duchesne River will be an essential tool for evaluating the success of the fish passage structure at the Myton Diversion. In order to effectively assess whether selective fish passage facilitates three species population stability and/or enhancement upstream of the Myton Diversion, a comparison of fish community composition conducted both before and after implementation of fish passage will be necessary. In cooperation with willing landowners (e.g., site access), UDWR will provide point estimates for fish species collected in the middle Duchesne River by conducting barge electrofishing in reaches several hundred meters in length. Multi-pass removal estimates and/or catch-per-unit effort will be used as indices of species abundance. A stratified sampling design (survey sites at locations spaced appropriately throughout the covered area) will be used to assess the fish assemblage at points of varying distances from the fish passage structure. Changes in the fish community over time from this monitoring will be the best indicator of the effectiveness of the fish passage, with a desired result of an increase in three species populations in the middle Duchesne River post-passage. However, survey sites and protocols may change throughout the lifetime of this agreement as this monitoring effort will likely require an adaptive management process to determine the best methods for assessing the fish assemblage over multiple years. For example, if feasible, raft electrofishing may be a more effective sampling strategy during higher flow conditions, while also allowing for larger proportion of the covered area to be sampled. Likewise, it will be important that key habitats that have a greater chance of harboring three species are sampled, which will require initial investigations to determine.

The UDWR will submit the results of these studies to the Service at the Spring DRWG meeting that follows monitoring efforts.

Monitoring Program for the Colorado Pikeminnow and Razorback Sucker

Recovery Program monitoring will be ongoing, providing population trend information on a larger geographic scale than covered under this Agreement. Population monitoring of both Colorado pikeminnow and razorback sucker is the responsibility of the Recovery Program. As such, the Recovery Program has defined areas, with existing population monitoring protocols, which are used to quantify recovery elements. However, the covered area is not part of these existing population monitoring areas. As a result, population monitoring of these two species will not be part of this Agreement.

The signatories will record the number of individuals that utilize the fish passage structure, document individuals that are found in irrigation canals, and denote individuals encountered in fish community sampling, using the same methods as described for the three species. These collections will then be provided to the Recovery Program to use in their existing population monitoring as they see fit.

As mentioned earlier, the Recovery Program monitors the population of Colorado pikeminnow in 5 reaches of the Green River.[11] The Recovery Program's established, standardized protocols will continue to monitor populations in these reaches, providing data on population trends in the Green River basin.

Population monitoring for razorback sucker in the Green River basin has not taken place over the past decade because of the low numbers of wild fish last reported in the early 2000s. Instead, the Recovery Program focused on stocking razorback sucker into these river reaches. After many years of implementing this stocking program, the Recovery Program may soon begin monitoring populations of razorback sucker again. However, this is solely the decision of the Recovery Program and is not a requirement of this Agreement.

RESPONSIBILITIES

The Parties to this Agreement agree to work cooperatively on issues necessary to further the purposes of this Agreement. Each Party is tasked with and accountable for certain responsibilities as outlined below. However, all Parties agree that the implementation of this Agreement should be undertaken as a collaborative effort. Moreover, nothing in this Agreement shall limit the ability of tribal, federal, and state conservation authorities to perform their lawful duties. In addition, it is recognized by all parties that the affected irrigation companies and individual water users shall not incur or be responsible for any costs associated with this agreement. Lastly, it is recognized that all signatories to this agreement must work with financial constraints, and some actions are dependent upon available funding.

Specific responsibilities of Parties to this Agreement are as follows.

Utah Division of Wildlife Resources Shall:

1. In cooperation with the Ute Tribe and U.S. Fish and Wildlife Service, provide funds received from the Desert Fishes Habitat Partnership grant to fund a portion of the fish passage structure at the Myton Diversion;
2. In cooperation with the Ute Tribe, Bureau of Indian Affairs, and Bureau of Reclamation, assist with oversight on construction of the fish passage structure at the Myton Diversion;
3. In cooperation with the Ute Tribe and the Bureau of Indian Affairs, operate the selective fish passage portion of the structure over the life of the Agreement;
4. In cooperation with the Ute Tribe, monitor fish populations in the Duchesne River; and
5. Submit monitoring reports describing the status of instream fish populations and usage of the passage structure.

The Associated Water Users of the Duchesne and Strawberry Rivers:

1. Continue to work towards target instream flow recommendations in the 2005 BO amendment by allowing fish conservation water to bypass diversions as described in the Agreement;
2. Work with its constituents to remove stranded fish in canals by requesting that water users contact the Service or the UDWR in a reasonable amount of time when it discovers large fish

[11] The Duchesne River is not part of any of these sampling areas because there is no resident population.

(both alive and dead) in a canal that it believes is a protected species, such as a Colorado pikeminnow, razorback sucker, or three species; and
3. Work with its constituents to remove stranded fish in canals by requesting that water users contact the UDWR in a reasonable amount of time whenever large numbers of fish are discovered in a canal.

The U.S. Fish and Wildlife Service Shall:

1. After public review and comment, and in compliance with all applicable laws, provide an enhancement of survival permit to the Associated Water Users of the Duchesne and Strawberry Rivers authorizing any take of the listed fish that are entrained into canals. This holds participating water users harmless for any listed fish that become entrained into their canals because the fish used the fish passage structure;
2. Include in the enhancement of survival permit to the Associated Water Users of the Duchesne and Strawberry Rivers, incidental take authorization for the three unlisted species as a result of entrainment in canals that becomes effective if the species are listed;
3. Not require irrigation companies to screen their diversion structures; and
4. Not infringe upon any existing water right in the covered area in order to provide fish conservation flows.

AUTHORITIES

Sections 2, 7, and 10 of the ESA and the Fish and Wildlife Coordination Act allow the Service to enter into this Agreement. Section 2 of the ESA states that encouraging parties, through federal financial assistance and a system of incentives, to develop and maintain conservation programs is key to safeguarding the nation's heritage in fish, wildlife, and plants. Section 7 of the ESA requires the Service to review programs that they administer and to utilize such programs in furtherance of the purposes of the ESA. Lastly, Section 10(a) of the ESA authorizes the issuance of permits to allow certain acts that would otherwise be prohibited by the ESA, if such acts are expected to enhance the propagation or survival of the affected species.

This Agreement is entered into pursuant to the Service's Final Safe Harbor Policy (64 FR 32717). The implementing regulations for Safe Harbor Agreements at 50 CFR 17.22(d) and 50 CFR 17.32(d), implement the intent of the Parties to follow the procedural and substantive requirements of section 10(a)(1)(A) of the ESA. By entering into this Agreement, the Service, in collaboration with the other Parties, is utilizing the Safe Harbor Program to further the conservation of the Nation's fish, wildlife, and plants. Under this permit, the take of a listed species is permitted as long as the activity causing the take has been specifically allowed in the SHA, and the overall effect of the SHA is a net conservation benefit to the species.

Further, this Agreement is entered into pursuant to the Service's CCAA final policy (64 FR 32726) and the implementing regulations for CCAAs at 50 FR 17.22(d) and 50 CFR 17.32(d) and implements the intent of the Parties to follow the procedural and substantive requirements of section 10(a)(1)(A) of the ESA. By entering into this Agreement, the Service is utilizing its Candidate Conservation Program to further the conservation of the nation's fish, wildlife, and plants. Under this permit, if a covered species becomes federally listed in the future, take of the species is permitted as long as the activity causing the take has been specifically allowed in the CCAA, and the overall effect of the CCAA is to enhance the survival of a candidate or other unlisted

species such that the potential implementation of similar activities on other necessary properties in the species' range would preclude the need to list the species.

The President of the Board of the DSWUA has the authority to sign this Agreement on behalf of local water users because the DSWUA is a cooperative association in which every entity on the river has a voting membership.

The Ute Tribe Fish and Wildlife Department (Ute Tribe) has the authority to fund the fish passage, and to operate the passage. The Ute Tribe also has authority to sample stream reaches in the lower Duchesne River. The UDWR, in cooperation with the Ute Tribe, will operate the fish passage structure to manage the movement of target native and non-native species. The UDWR also has the authority to sample stream reaches for population monitoring and to manage the area for a sport fishery. The Ute Tribe and UDWR entered into a Memorandum of Understanding (MOU) in 2011 to formalize the process by which the UDWR would access the diversion structure. As part of the MOU, the Ute Tribe grants UDWR access to the site to assist, as needed, with oversight of construction, modification, and monitoring of the structure (after the UDWR has received appropriate permits). Additionally, the MOU states that the Ute Tribe and the UDWR will cooperatively monitor the fish passage structure during the spring, when fish are attempting to move upstream (i.e., during spring peak flows).

BACKGROUND

DESCRIPTION OF FLOW RECOMMENDATIONS

Flow recommendations for the Duchesne River are called for in the Service's May 4, 2005 "Update to the Reasonable and Prudent Alternative (RPA) in the July 1998 Biological Opinion for the Duchesne River Basin" (2005 Amendment). The 2005 Amendment amended the original 1998 biological opinion with up-to-date information on the biology and habitat usage of Colorado pikeminnow and razorback sucker, and refined flow recommendations in the Duchesne River for the two species. Both base flow and high flow recommendations were established, with base flow recommendations based on biological productivity (50 cfs) and fish movement (115 cfs) and high flow recommendations based on channel maintenance principles. For a detailed description of the flow recommendations, please see the Supporting Information.

ASSURANCES PROVIDED

Through this Agreement, the Service provides the UDWR and participating irrigation companies with assurances that no additional conservation measures or additional water use restrictions (beyond the "Conservation Measures" described in this SHA/CCAA that have been voluntarily agreed to) will be required on irrigation facilities should any of the three species become listed as a threatened or endangered species in the future. These assurances will be authorized with the issuance of an Enhancement of Survival Permit under section 10(a)(1)(A) of ESA.

Specifically, the affected irrigation companies and individual water users shall not incur or be responsible for any costs associated with this agreement.

Assurances provided in case of changed or unforeseen circumstances

The regulatory assurances provided by the Permit are linked to the existence of changed circumstances and unforeseen circumstances. "*Changed circumstances* means changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that can reasonably be anticipated by plan or agreement developers and the Service and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events)" 50 CFR 17.3. "*Unforeseen circumstances* means changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that could not reasonably have been anticipated by plan or agreement developers and the Service [USFWS] at the time of the conservation plan's or agreement's negotiation and development, and that result in a substantial and adverse change in the status of the covered species" 50 CFR 17.3. In the event of changed and unforeseen circumstances the Agencies are committed to working with the Participating Property owners to implement measures that limit the level of authorized take of the covered species and allow the Participating Property owner to continue to implement their site-specific plan in compliance with this Agreement and the Permit.

(1) *Changed circumstances provided for in the CCAA.* Changed circumstances can include wildfire, disease introduction, and illegal introductions of exotic fish species. It is not possible to identify specific conservation measures to address these changed circumstances at this time because the specific nature and extent of these events are not predictable. However, response measures by the Parties may include removal of exotic or diseased fish, modified angling regulations, or stocking of hatchery raised fish. If additional conservation measures not provided for in this CCAA are necessary to respond to changed circumstances, the Service, UDWR, and Participating Property owners will attempt to agree on suitable measures. The Service will not require any conservation measures in addition to those provided for in this CCAA without the consent of UDWR and the Participating Property owners.

(2) *Unforeseen circumstances.* If additional conservation measures are necessary to respond to unforeseen circumstances, the Director of the Service may require additional measures of the Participating Property owner, but only if such measures are limited to modifications within the Agreement's conservation strategy for the affected species, and only if those measures maintain the original terms of the Agreement to the maximum extent possible. Additional conservation measures will not involve the commitment of additional land, water, or financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the Agreement without the consent of the Participating Property owner and the Agencies (UDWR and Service). The Service will have the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of the covered species.

The Service will consider, but not be limited to, the following factors related to the covered species: 1) size of the current range; 2) percentage of range adversely affected by the Agreement; 3) percentage of range conserved by the Agreement; 4) ecological significance of that portion of the range affected by the Agreement; 5) level of knowledge about the covered species and the degree of specificity of the conservation program under the Agreement; and 6) whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of covered species.

NOTIFICATION OF TAKE REQUIREMENTS

By signature of the Agreement, the DSWUA agree to provide the UDWR or the Service with an opportunity to rescue individuals of the covered species before any authorized take occurs. Notification that such take will occur must be provided to UDWR and the Service 60 days in advance of the action or immediately upon recognition that take will occur if notification is not possible at least 60 days prior.

MODIFICATIONS TO THE AGREEMENT

Modification and Amendment of the Agreement

Proposed minor modifications and major amendments to this Agreement must be approved by all Parties and provided to the non-proposing Parties in writing. The non-proposing Parties will have sixty (60) days in which to evaluate and approve or disapprove the proposed minor modification/amendment. A proposed minor modification/amendment will be deemed appropriate and effective sixty days after receipt unless either of the non-proposing Parties provides in writing its disapproval of the proposed modification or unless the Service gives written notice that the proposed modification must be processed as a formal amendment.

Minor modifications to this Agreement shall include, but are not limited to:

1. Corrections of typographic, grammatical, and similar editing errors that do not change the intended meaning;
2. Corrections or updating of any maps or figures;
3. Corrections or updating of information to reflect previously approved amendments;
4. Minor changes to survey, monitoring, or reporting protocols.

A major amendment will be required if the Service determines that such modification/amendment would result in outcomes that are significantly different from those analyzed in this Agreement, including, but not limited to modifications and proposed changes that would result in a different level or type of take than analyzed in this Agreement or that would result in the Agreement failing to meet the Conservation Goals and Objectives section of this Agreement.

Major modifications/amendments may necessitate further review and analysis, including public notification in the Federal Register, public comment period, and other administrative compliance actions as required by the ESA, and any other applicable laws, regulations, policies, and directives.

Modification and Amendment of the Permit

Modification and amendments to the Permit must be agreed to by all Parties. The permit may be amended to accommodate minor or major modifications in compliance with all applicable legal requirements, including but not limited to the Endangered Species Act, the National Environmental Policy Act, and the Service's permit regulations at 50 CFR 13 & 59 CFR 17. The party proposing the amendment shall provide a statement describing the proposed amendment and the reasons for it.

Termination of the Agreement

As provided for in the draft CCAA Handbook (U.S. Fish and Wildlife Service 2003) and the Safe Harbor Agreement Final Policy(64 FR 32717), an enrolled water user may terminate

implementation of the Agreement's individual voluntary management actions prior to the Agreement's expiration date, even if the expected benefits have not been realized. If an enrolled water user is unable or unwilling to continue implementation of the plans and stipulations of the Agreement, the water user must relinquish the Permit to the FWS and the regulatory assurances would no longer apply. An enrolled water user may terminate a Certificate of Inclusion with 30 days prior written notice to the FWS. The FWS shall be provided an opportunity to relocate affected species within 48 hours of that notice.

Permit Suspension or Revocation

The Service will not exercise its authority to suspend or revoke the Permit unless and until the following circumstances exist:

1. Any reason set forth in 50 CFR 13.28(a) (1) through (4); and
2. If continuation of the permitted activity would either appreciably reduce the likelihood of survival and recovery in the wild of any listed or candidate species or directly or indirectly alter designated critical habitat such that it appreciably diminishes the value of that critical habitat for both the survival and recovery of a listed species.

Before revoking a permit under (2) of this section, the Service, with the consent of the other Parties will pursue all appropriate options to avoid revocation. These options may include, but are not limited to:

1. Extending or modifying this Agreement;
2. Capturing and relocating the affected species;
3. Purchasing an easement or water right.

Remedies and Dispute Resolution

All Parties will have all remedies otherwise available to enforce the terms of the Agreement and the Permit. No party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement, or any other cause of action arising from this Agreement. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

Renewal of Agreement

The Agreement can be renewed with or without modification upon the written approval of all Parties.

Succession and Transfer

This Agreement shall be binding on and shall inure to the benefit of the enrolled water user(s) and their respective successors and transferees (i.e., new owners) in accordance with applicable regulations (50 CFR 13.24 and 13.25). The new owner(s) will have the option of receiving CCAA and SHA assurances and transfer of the permit by signing a new certificate of inclusion. The CI and assurances issued to the enrolled water user(s) will be extended to the new owner(s) only if the latter chooses to enroll. As a party to the CCAA, SHA, and permit, the new owner(s) will have the same rights and obligations with respect to the enrolled property as the original owner.

The enrolled water user(s) shall notify the FWS of any transfer of ownership, so that the FWS can attempt to contact the new owner, explain the baseline responsibilities applicable to the property, and seek to interest the new owner in signing a CI. Assignment or transfer of the permit shall be governed by FWS regulations in force at the time. If a new owner chooses not to enroll, the permit authorizations and assurances for that property will cease.

Availability of Funds

Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the Service will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from UDWR. The Parties acknowledge that UDWR will not be required under this Agreement to expend any UDWR funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

No Third-Party Beneficiaries

This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor does it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties will remain as imposed under existing law.

Notices and Reports

Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the agencies listed below, as appropriate:

Utah Division of Wildlife Resources (UDWR)
1594 W. North Temple, Suite 2110
Salt Lake City, UT 84114

U.S. Fish and Wildlife Service
2369 West Orton Circle
West Valley City, Utah 84117

AUTHORIZING SIGNATURES

_____

Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

_____

Clinton Moon, President — Date
Associated Water Users of the Duchesne and Strawberry Rivers

_____

Larry Crist, Field Supervisor — Date
Utah Ecological Services Office, U.S. Fish and Wildlife Service

APPENDIX A: CERTIFICATE OF INCLUSION

Certificate of Inclusion

in the Safe Harbor Agreement and Candidate Conservation Agreement with Assurances for the Colorado Pikeminnow, Razorback Sucker, Flannelmouth Sucker, Bluehead Sucker, and Roundtail Chub Between the Associated Water Users of the Duchesne and Strawberry Rivers, the Utah Division of Wildlife Resources, and the U.S. Fish and Wildlife Service (Agreement)

This certifies that the Participating water user, who owns or administers the property described below, is included within the scope of Permit No. [INSERT], issued by the U.S. Fish and Wildlife Service (Service) on [INSERT DATE], to the Associated Water Users of the Duchesne and Strawberry Rivers (DSWUA) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended, 16 U.S.C. 15389(a)(1)(A). Pursuant to that permit and this Certificate, the Participating water user is authorized for the incidental take of Colorado pikeminnow, razorback sucker, flannelmouth sucker, bluehead sucker, and roundtail chub during the course of lawful management activities described in Sections [LIST SECTIONS] of the Agreement on the specific lands identified in this Certificate.

Such permit authorization is subject to the carrying out of conservation measures described in this Certificate, the terms and conditions of the permit, and the terms and conditions of the Agreement entered into by DSWUA and the Service. By signing this Certificate of Inclusion, the Participating water user agrees to carry out all assigned conservation measures as described in the Agreement and Certificate for a period of [SPECIFY] years.

This form documents the specific conservation commitments and enrolled sites involved for the Safe Harbor Agreement and the Candidate Conservation Agreement with Assurances for the Colorado Pikeminnow, Razorback Sucker, Flannelmouth Sucker, Bluehead Sucker, and Roundtail Chub in the Duchesne and Strawberry Rivers above the Myton Diversion.

(A) Participating Water User's Name and Address:

_____

_____

(B) Point of diversion legal description and map showing point of diversion (attach additional documentation as necessary):

_____

_____

(C) Conservation Commitments:

As described in the Agreement, the participating water user will:

1. Continue to work towards target instream flow recommendations in the 2005 BO amendment by allowing fish conservation water to bypass canal intakes as described in the Agreement;
2. Work with cooperating partners to remove stranded fish in canals by contacting the Service or the UDWR in a reasonable amount of time when it discovers large fish (both alive and dead) in a canal that it believes is a protected species, such as a Colorado pikeminnow, razorback sucker, or three species;

3. Work with cooperating partners to remove stranded fish in canals by contacting the UDWR in a reasonable amount of time whenever large groups of fish are discovered in a canal; and

(D) Required Conservation Period:

The term of this Agreement shall begin on the date of the final signature to this Agreement and shall remain in effect for [SPECIFY] years.

(E) Baseline Condition of the Point of Diversion:

_____

_____

_____

_____

(F) Site-specific Monitoring Plan (as appropriate):

_____

_____

_____

_____

_____ _____

Participating Water User Date

_____ _____

Associated Water Users of the Duchesne and Strawberry Rivers Date

_____ _____

Concurrence, U.S. Fish & Wildlife Service Date

APPENDIX B: UDWR AND UTE TRIBE AGREEMENT

AGREEMENT

THIS AGREEMENT ("AGREEMENT") is made this ____ day of December, 2011, by and between the Utah Division of Wildlife Resources ("DIVISION") and the Ute Indian Tribe, of the Uintah and Ouray Reservation ("TRIBE").

RECITALS

Whereas, the DIVISION and the TRIBE desire to modify the Myton Townsite Diversion Structure on Ute Indian Tribal Trust Lands to allow fish passage and increase habitat available to fish moving from the Green and lower Duchesne rivers into additional habitat above the Myton Diversion; and

Whereas, the TRIBE, will grant access to the Myton Townsite Diversion Structure to allow construction, modification, and monitoring of the Myton Townsite Diversion Structure by means of the existing Tribal Trust lands access permitting process; and

Now therefore, in consideration of the mutual promises and covenants contained in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. The DIVISION'S obligations. The DIVISION will:
   a. Obtain required permits from the TRIBE to access the Myton Townsite Diversion Structure to administrate construction;
   b. Work cooperatively with the TRIBE to monitor the fish passage structure during the spring when fish are moving upstream,
2. The TRIBE'S obligations. The TRIBE will:
   a. Work cooperatively with the DIVISION to monitor the fish passage structure during the spring when fish are moving upstream,
3. The DIVISION and the TRIBE agree to meet each March to discuss the terms of this AGREEMENT, make required modifications, and otherwise plan the monitoring schedule for the coming year.

4. Modification. Modification to the AGREEMENT may be proposed by either PARTY and shall become effective only upon being reduced to a written instrument executed by signature of both parties.

5. Termination of Agreement. This AGREEMENT shall become effective upon execution by both parties. It shall remain in force and effect until a formal, written notification of termination, by either party, is provided upon 30 days notice to the other.

6. Resolving Disputes. The parties agree to work harmoniously to achieve the objectives of this AGREEMENT and will attempt in good faith to resolve disputes by negotiation and cooperation.

IN WITNESS WHEREOF, each party hereto has caused this AGREEMENT to be executed by an authorized official on the day and year set forth opposite their signature below.

UTE INDIAN TRIBE

By: _____ Date: 02/10/12
Title: Ute Indian Tribe Chairperson

UTAH DIVISION OF WILDLIFE RESOURCES

By: _____ Date: 4/9/12
Title: Director

ACTING DIRECTOR

LITERATURE CITED

Carlson, Andrew J. & Frank J. Rahel. 2007. A Basinwide Perspective on Entrainment of Fish in Irrigation Canals. Transactions of the American Fisheries Society 136:1335-1343.

CUWCD. 2013. 2004-2011 Water Management Report: Duchesne River Working Group. 40 pages

Gaeuman, David, Peter Wilcock & John Schmidt. 2003. High Flow Requirements for Channel and Habitat Maintenance on the Lower Duchesne River between Randlett and Ouray, Utah. Upper Colorado River Basin Endangered Fishes Recovery Implementation Program Project No. 84-4. 148 pages.

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U.S. Fish and Wildlife Service. 2002b. Razorback Sucker (*Xyrauchen texanus*) Recovery Goals: amendment and supplement to the Razorback Sucker Recovery Plan. Denver, Colorado: US Fish and Wildlife Service, Mountain-Prairie Region. 113 pages.

U.S. Fish and Wildlife Service. 2003. Draft Candidate Conservation Agreements with Assurances Handbook. 50 pages.

Utah Division of Wildlife Resources. 2006. Conservation and Management Plan for Three Fish Species in Utah: Addressing needs for roundtail chub (*Gila robusta*), bluehead sucker (*Catostomus discobolus*), and flannelmouth sucker (*Catostomus latipinnis*). Salt Lake City: Utah Department of Natural Resources. 80 pages.